

## CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

- 1        1.        A process of testing spacing of wiring in a circuit comprising:  
2                forming a plurality of conductor rectangles representative of conductors of  
3        said circuit;  
4                forming minimum spacing rectangles around said conductor rectangles,  
5        said minimum spacing rectangles being larger than respective ones of said  
6        conductor rectangles;  
7                identifying a possible error rectangle when a first conductor rectangle of  
8        said conductor rectangles occupies a portion of a minimum spacing rectangle of a  
9        second conductor rectangle of said conductor rectangles;  
10                checking whether said possible error rectangle is a true error; and  
11                reporting said true errors.

- 1        2.        The process in claim 1, wherein said checking comprises:  
2                classifying said possible error rectangle as a possible diagonal error  
3        rectangle or a possible non-diagonal error rectangle;  
4                determining that said possible diagonal error rectangle is said not a true  
5        error when at least two adjacent sides of said possible diagonal error rectangle

6 which connect said first conductor and said second conductor are covered by a  
7 third conductor of said conductors; and  
8 determining that said possible non-diagonal error rectangle is not a true  
9 error when said possible non-diagonal error rectangle is completely covered by said  
10 third conductor.

1 3. The process in claim 1, wherein said forming minimum spacing rectangles  
2 comprises forming said minimum spacing rectangles to have sides which are a  
3 minimum spacing design constraint distance from sides of respective ones of said  
4 conductor rectangles.

1 4. The process in claim 1, wherein said conductors are within a single net.

1 5. The process in claim 1, wherein said circuit comprises a plurality of nets  
2 and said process further includes checking for shorts between different ones of said  
3 nets.

1 6. The process in claim 1, further comprising dividing said possible error  
2 rectangle into at least two possible error rectangles if said possible error rectangle  
3 is partially covered by a third conductor of said conductors.

1 7. A process of testing spacing of elements in a structure comprising:

2 forming a plurality of element rectangles representative of elements of said  
3 structure;  
4 forming minimum spacing rectangles around said element rectangles, said  
5 minimum spacing rectangles being larger than respective ones of said element  
6 rectangles;  
7 identifying a possible error rectangle when a first element rectangle of said  
8 element rectangles occupies a portion of a minimum spacing rectangle of a second  
9 element rectangle of said element rectangles;  
10 checking whether said possible error rectangle is a true error; and  
11 reporting said true errors.

1 8. The process in claim 7, wherein said checking comprises:

2 classifying said possible error rectangle as a possible diagonal error  
3 rectangle or a possible non-diagonal error rectangle;

4 determining that said possible diagonal error rectangle is said not a true  
5 error when at least two adjacent sides of said possible diagonal error rectangle  
6 which connect said first element and said second element are covered by a third  
7 element of said elements; and

8 determining that said possible non-diagonal error rectangle is not a true  
9 error when said possible non-diagonal error rectangle is completely covered by said  
10 third element.

1 9. The process in claim 7, wherein said forming minimum spacing rectangles  
2 comprises forming said minimum spacing rectangles to have sides which are a  
3 minimum spacing design constraint distance from sides of respective ones of said  
4 element rectangles.

1 10. The process in claim 7, wherein said elements are within a single net.

1 11. The process in claim 7, wherein said structure comprises a plurality of nets  
2 and said process further includes checking for shorts between different ones of said  
3 nets.

1 12. The process in claim 7, further comprising dividing said possible error  
2 rectangle into at least two possible error rectangles if said possible error rectangle  
3 is partially covered by a third element of said elements.

1 13. A computer system for testing spacing of wiring in a circuit comprising:  
2 a unit for forming a plurality of conductor rectangles representative of conductors  
3 of said circuit;

4 a unit for forming minimum spacing rectangles around said conductor  
5 rectangles, said minimum spacing rectangles being larger than respective ones of  
6 said conductor rectangles;

7 a unit for identifying a possible error rectangle when a first conductor

8 rectangle of said conductor rectangles occupies a portion of a minimum spacing  
9 rectangle of a second conductor rectangle of said conductor rectangles;  
10 a unit for checking whether said possible error rectangle is a true error; and  
11 a unit for reporting said true errors.

1 14. The computer system in claim 13, wherein said unit for checking  
2 comprises:

3 a unit for classifying said possible error rectangle as a possible diagonal  
4 error rectangle or a possible non-diagonal error rectangle;

5 a unit for determining that said possible diagonal error rectangle is said not  
6 a true error when at least two adjacent sides of said possible diagonal error  
7 rectangle which connect said first conductor and said second conductor are covered  
8 by a third conductor of said conductors; and

9 a unit for determining that said possible non-diagonal error rectangle is not  
10 a true error when said possible non-diagonal error rectangle is completely covered  
11 by said third conductor.

12 15. The computer system in claim 13, wherein said unit for forming minimum  
13 spacing rectangles comprises a unit for forming said minimum spacing rectangles  
14 to have sides which are a minimum spacing design constraint distance from sides  
15 of respective ones of said conductor rectangles.

1 16. The computer system in claim 13, wherein said conductors are within a  
2 single net.

1 17. The computer system in claim 13, wherein said circuit comprises a plurality  
2 of nets and said computer system further includes a unit for checking for shorts  
3 between different ones of said nets.

1 18. The computer system in claim 13, further comprising a unit for dividing  
2 said possible error rectangle into at least two possible error rectangle if said  
3 possible error rectangle is partially covered by a third conductor of said conductors.

1 19. A computer program product comprising a program storage device readable  
2 by a computer system tangibly embodying a program of instructions executed by  
3 said computer system to perform a process for testing spacing of wiring in a circuit,  
4 said process comprising:

5 forming a plurality of conductor rectangles representative of conductors of  
6 said circuit;

7 forming minimum spacing rectangles around said conductor rectangles,  
8 said minimum spacing rectangles being larger than respective ones of said  
9 conductor rectangles;

10 identifying a possible error rectangle when a first conductor rectangle of  
11 said conductor rectangles occupies a portion of a minimum spacing rectangle of a  
12 second conductor rectangle of said conductor rectangles;  
13 checking whether said possible error rectangle is a true error; and  
14 reporting said true errors.

1 20. The computer program product in claim 19, wherein said checking  
2 comprises:

3 classifying said possible error rectangle as a possible diagonal error  
4 rectangle or a possible non-diagonal error rectangle;

5 determining that said possible diagonal error rectangle is said not a true  
6 error when at least two adjacent sides of said possible diagonal error rectangle  
7 which connect said first conductor and said second conductor are covered by a  
8 third conductor of said conductors; and

9 determining that said possible non-diagonal error rectangle is not a true  
10 error when said possible non-diagonal error rectangle is completely covered by said  
11 third conductor.

1 21. The computer program product in claim 19, wherein said forming  
2 minimum spacing rectangles comprises forming said minimum spacing rectangles  
3 to have sides which are a minimum spacing design constraint distance from sides  
4 of respective ones of said conductor rectangles.

1 22. The computer program product in claim 19, wherein said conductors are  
2 within a single net.

1 23. The computer program product in claim 19, wherein said circuit comprises  
2 a plurality of nets and said process further includes checking for shorts between  
3 different ones of said nets.

1 24. The computer program product in claim 19, said process further comprising  
2 dividing said possible error rectangle into at least two possible error rectangle if  
3 said possible error rectangle is partially covered by a third conductor of said  
4 conductors.